

**PATENT COOPERATION TREATY  
PCT  
INTERNATIONAL PRELIMINARY EXAMINATION**

01 NOV 2004

**REPORT PCT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP18011	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. <b>PCT/AU2003/000758</b>	International Filing Date (day/month/year) 18 June 2003	Priority Date (day/month/year) 18 June 2002
International Patent Classification (IPC) or national classification and IPC <b>Int. Cl. 7 C04B 35/515, 35/56, 35/58; H01L 39/12, 39/24</b>		
Applicant UNIVERSITY OF WOLLONGONG et al		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES; i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheet(s).</p>																	
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: right; padding-right: 5px;">I</td> <td style="width: 90%; padding-left: 5px;"><input checked="" type="checkbox"/> Basis of the report</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">II</td> <td style="padding-left: 5px;"><input type="checkbox"/> Priority</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">III</td> <td style="padding-left: 5px;"><input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">IV</td> <td style="padding-left: 5px;"><input checked="" type="checkbox"/> Lack of unity of invention</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">V</td> <td style="padding-left: 5px;"><input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">VI</td> <td style="padding-left: 5px;"><input type="checkbox"/> Certain documents cited</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">VII</td> <td style="padding-left: 5px;"><input type="checkbox"/> Certain defects in the international application</td> </tr> <tr> <td style="text-align: right; padding-right: 5px;">VIII</td> <td style="padding-left: 5px;"><input type="checkbox"/> Certain observations on the international application</td> </tr> </table>		I	<input checked="" type="checkbox"/> Basis of the report	II	<input type="checkbox"/> Priority	III	<input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	IV	<input checked="" type="checkbox"/> Lack of unity of invention	V	<input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	VI	<input type="checkbox"/> Certain documents cited	VII	<input type="checkbox"/> Certain defects in the international application	VIII	<input type="checkbox"/> Certain observations on the international application
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Date of submission of the demand 19 December 2003	Date of completion of the report 8 October 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer <b>RANDALL ENGLISH</b> Telephone No. (02) 6283 2563

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/AU2003/000758

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

the international application as originally filed.

the description, pages , as originally filed,  
pages , filed with the demand,  
pages ; received on with the letter of

the claims, pages , as originally filed,  
pages , as amended (together with any statement) under Article 19,  
pages , filed with the demand,  
pages , received on with the letter of

the drawings, pages , as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of

the sequence listing part of the description:  
pages , as originally filed  
pages , filed with the demand  
pages , received on with the letter of

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

the language of publication of the international application (under Rule 48.3(b)).

the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4.  The amendments have resulted in the cancellation of:

the description, pages

the claims, Nos.

the drawings, sheets/fig.

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

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## IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:
  - restricted the claims.
  - paid additional fees.
  - paid additional fees under protest.
  - neither restricted nor paid additional fees.
2.  This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
  - complied with.
  - not complied with for the following reasons:

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1-13, 18-26 are directed to a superconducting material of formula (MgB<sub>x</sub>Si<sub>y</sub>C<sub>z</sub>) or (MgB<sub>x</sub>Ti<sub>y</sub>C<sub>z</sub>). It is considered that the use of a superconducting material of formula (MgB<sub>x</sub>Si<sub>y</sub>C<sub>z</sub>) or (MgB<sub>x</sub>Ti<sub>y</sub>C<sub>z</sub>) comprises a first "special technical feature".
2. Claims 14-17 are directed to any type of superconducting material which comprises silicon carbide. It is considered that the use of a silicon carbide comprises a second "special technical feature".

These groups are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is the use of a superconducting material. However, this concept is not novel in the light of JP 01-157452 (TOSHIBA CORP) 20 June 1989. Therefore these claims lack unity (a posteriori).

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
  - all parts.
  - the parts relating to claims Nos.

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims 1-13, 15, 17-26	YES
	Claims 14, 16	NO
Inventive step (IS)	Claims 1-26	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-26	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)**

D1. Patent Abstracts of Japan, JP 01-157452 (TOSHIBA CORP) 20 June 1989

**NOVELTY (N)**

The scope of claims 14-17 is not limited to a superconducting material of formula  $(MgB_xSi_yC_z)$  or  $(MgB_xTi_yC_z)$  as defined in claims 1 and 18, respectively. Rather, the scope of claims 14-17 encompasses any known (or unknown) superconducting material.

The prior art document D1 discloses a superconducting material comprising a silicon carbide. Therefore, the invention defined in claims 14 and 16 is not novel in light of prior art document D1.

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